

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
	)	
Establishing Just and Reasonable Rates for Local Exchange Carriers	)	WC Docket No. 07-135
	)	
High-Cost Universal Service Support	)	WC Docket No. 05-337
	)	
Developing an Unified Intercarrier Compensation Regime	)	CC Docket No. 01-92
	)	

**COMMENTS OF HYPERCUBE TELECOM, LLC**

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## EXECUTIVE SUMMARY

As a carrier whose services help bridge the gap between advanced services and traditional networks, HyperCube Telecom, LLC (“HyperCube”) generally supports the Commission’s efforts to implement the recommendations of the *National Broadband Plan*<sup>1</sup> and bring long-overdue reform and certainty to the interstate intercarrier compensation (“ICC”) regime, thereby enabling the transformation of the nation’s telecommunications infrastructure and services to meet the challenges and opportunities of the 21st Century. The Commission should, however, modify its proposed rules addressing end-user traffic stimulation and phantom traffic to make them more targeted and effective tools without adversely affecting competition and innovation in the telecommunications marketplace.

First, the Commission should ensure that rules intended to address a limited situation are, in fact, narrowly focused to cover only that situation. Unfortunately, the proposed rules addressing arrangements stimulating increased *end-user* calling to stations on the networks of high access rate local exchange carriers (“LECs”) are not narrowly focused. As drafted, the proposed rules would sweep so broadly as to also unintentionally restrain certain incentive arrangements prevalent in the telecommunications industry today between carriers and their *wholesale* customers. These arrangements do not have a locus in rural areas but do contribute to the robustness of the competitive marketplace for wholesale services. The currently proposed remedies should be narrowed so that they do not unnecessarily burden wholesale service providers whose revenue sharing arrangements do not stimulate increased end-user calling and whose per call access rates in the serving areas in which they operate are already benchmarked to

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<sup>1</sup> Federal Communications Commission, *Connecting America: The National Broadband Plan*, GN Dkt. 09-51 (rel. Mar. 16, 2010) (“*National Broadband Plan*”).

the rates of the former Regional Bell Operating Company (“RBOC”) LECs in those serving areas. Applying the proposed rules to wholesale providers would not change end-user behavior, but it would needlessly stifle innovation and curtail vigorous competition in the market for intermediate services, including tandem switching and transport services. Because such competition promotes innovation, ultimately lowers rates, and enables the transition to a national broadband network infrastructure, inhibiting revenue sharing by wholesale providers would have an adverse effect on implementation of the objectives of the *National Broadband Plan*.

HyperCube also recommends that the Commission refine the proposed “phantom traffic” rules to reflect the current state of the industry with respect to call routing and billing systems. HyperCube’s proposed rule modifications (including requiring use of the Jurisdiction Information Parameter (“JIP”) in call signaling) can be readily implemented directly or indirectly<sup>2</sup> at the Central Office (“CO”) level and will make the rules more effective in minimizing both “phantom traffic” and phantom traffic disputes between service providers. This will advance the Commission’s goal of freeing resources for network improvements, accelerate the delivery of advanced services to consumers, and reduce the number of disputes and other issues which exist in the ICC ecosystem.

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<sup>2</sup> See ATIS-300011 “Rules for Populating JIP, Rule 5.”

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**COMMENTS OF HYPERCUBE TELECOM, LLC**

HyperCube Telecom, LLC (“HyperCube”) hereby responds to the *Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking* issued by the Federal Communications Commission (“Commission” or “FCC”) in the above-captioned proceeding.<sup>3</sup> These Comments are particularly directed to Section XV of the *USF/ICC Transformation NPRM*, captioned “*Reducing Inefficiencies and Waste by Curbing Arbitrage Opportunities*.”<sup>4</sup>

**I. Introduction – HyperCube Telecom, LLC**

HyperCube is a provider of wholesale local and national tandem switching and transport services to the entire spectrum of traditional and next generation service providers. The company’s network carries billions of minutes per month for a wide range of providers, including wireless carriers, wireline competitive local exchange carriers (“CLECs”) and

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<sup>3</sup> See *Connect America Fund*, Notice of Proposed Rulemaking and Further Notice of Proposed Rulemaking, FCC 11-13 (rel. Feb. 9, 2011) (“USF/ICC Transformation NPRM,” or “NPRM”).

<sup>4</sup> *Id.* at ¶¶ 603-67.

interexchange carriers (“IXCs”), cable telephony providers, and Voice over Internet Protocol (“VoIP”) providers. HyperCube represents an alternative to traditional networks that provide technology-agnostic solutions for competitive and traditional providers in markets nationwide. HyperCube’s services thus facilitate the interconnection of all types of networks as telecommunications infrastructure evolves to meet the nation’s changing needs.<sup>5</sup>

HyperCube provides competitive transport of switched access traffic, as well as local traffic, from the technologically diverse networks of its customers to those of wireless carriers, IXCs, CLECs, and traditional LECs. As a competitive tandem services provider, HyperCube bridges the gaps between the networks of traditional providers and those of new and innovative companies using varied network platforms, allowing those emerging providers to interconnect their respective networks and to exchange traffic with one another more effectively and efficiently. HyperCube performs switching, transport, signaling, and database queries, among other services. HyperCube’s Internet Protocol-ready network is capable of effectively moving any type of traffic across any network element while maintaining routing, jurisdiction, and critical call information intact all the way to the call destination regardless of originating or terminating technologies.

HyperCube offers a tandem infrastructure that reflects the new reality of a more modern competitive telephony environment, offering the "next generation" of modern tandem technology that supports both Time-Division Multiplexing (“TDM”) and Internet Protocol (“IP”) interconnection. The company operates a nationwide optical-backbone network (both TDM- and IP-based) with a switching infrastructure located in major markets that provides network diversity via direct switching to end offices, offering a modern competitive alternative to traditional tandem hierarchies. These services supply a single interconnection point for calls that

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<sup>5</sup> See, e.g., *NPRM* at ¶ 8 (describing the growth of wireless and VoIP services).

need to be connected across different traditional and competitive networks that use different network architectures and protocols, an essential function if the nation is to accelerate the migration to IP-based networks.<sup>6</sup>

In addition to providing an alternative to traditional networks, HyperCube's services give telecommunications providers the option of turning to an expert to route traffic for them, offering greater efficiency, visibility, and more reliability, thereby enabling those providers to devote more of their resources to serving their end-user customers. HyperCube's network interconnection alternatives offer significant cost advantages over many traditional carrier offerings and provide a modern web-based customer portal for traffic reporting and service management.

HyperCube does not participate in arrangements that promote increased end-user calling to stations on the networks of high access rate LECs. Nor is such end-user calling stimulation a by-product of the company's revenue-sharing marketing approach. Importantly, HyperCube's tariffed interstate access rates, calculated on the basis of the effective tariffed switched access rate,<sup>7</sup> are benchmarked to those of the applicable former RBOCs in the serving areas where HyperCube operates. HyperCube's interstate tariffed access rates therefore *already* meet the Commission's proposed rate benchmarks for CLECs engaged in "access stimulation."

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<sup>6</sup> See, e.g., *NPRM* at ¶ 10 (identifying as one of four guiding principles for Universal Service Fund ("USF") and ICC reform "accelerat[ing] the transition from circuit-switched to IP-based networks, with voice ultimately one of many applications running on fixed and mobile broadband networks").

<sup>7</sup> That is, the total per call, per minute access charge is the same as that of the applicable RBOC LEC, although, because of differences in network architecture, the LEC rate may be broken out into different sub-element charges (regardless of actual underlying technologies or architectures being deployed). To avoid restraining innovation in network design, any rate benchmarks must be established on the basis of the effective per call bill rate, not on the basis of individual rate elements characteristic of traditional networks.

**II. Measures to Address Stimulation of End-User Traffic Should Not Inhibit Use of “Revenue Sharing” as an Effective Wholesale Marketing Tool in a Competitive Marketplace.**

“Revenue sharing” is a longstanding marketing tool that, as HyperCube<sup>8</sup> and other commenting parties have shown, is prevalent throughout many sectors of the U.S. economy. Nonetheless, some confusion about “revenue sharing” has apparently developed over the course of the proceedings considering intercarrier compensation issues.<sup>9</sup> In particular, some carriers have raised concerns about the limited category of revenue sharing arrangements intended to stimulate the origination of *end-user* calling that will be terminated on stations on the networks of LECs with high access rates. This end-user traffic stimulation is the type of revenue sharing on which the Commission’s proposals focus.<sup>10</sup> The proposed rules, however, are overbroad and extend beyond the Commission’s intended scope to also cover wholesale revenue sharing arrangements that HyperCube believes are in the public interest and promote a competitive environment.<sup>11</sup> HyperCube therefore urges the Commission to limit any rules adopted in this proceeding to avoid restricting the development of a fully competitive market for wholesale competitive tandem provider services by imposing unnecessary restrictions and burdens on service offerings unrelated to end-user traffic stimulation.

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<sup>8</sup> See Letter from Robert W. McCausland, Senior Vice President Regulatory and Government Affairs, HyperCube Telecom, LCC, to Marlene H. Dortch, Secretary, FCC, WC Dkt. 07-135 (Oct. 20, 2010).

<sup>9</sup> The intercarrier compensation portion of this proceeding dates back to 2001. *See Developing a Unified Intercarrier Compensation Regime, Notice of Proposed Rulemaking*, 16 FCC Rcd. 9610 (2001).

<sup>10</sup> See *NPRM* at ¶ 36 (describing arrangements intended to stimulate increases in end-user traffic); *see also NPRM* at ¶ 606 (citing example of a high access-rate LEC sharing access charge revenues with a chat line generating high inbound call volume).

<sup>11</sup> The Commission expressly invited parties to recommend modifications of the proposed rules that would exclude from the scope of the proposed rules revenue sharing arrangements that are in the public interest. *See NPRM* at ¶ 660.



**A. The Commission's Rules Should Not Restrict "Revenue Sharing" by Wholesale Service Providers That Promotes the Public Interest in a Competitive Market and Advances the Broadband Transition.**

HyperCube, as a relative newcomer to the telecommunications market, does not have a longstanding base of customers directing traffic to its network. Rather, HyperCube has to earn the right to carry every call that its customers route through the HyperCube network with high quality service and superior economics. As described above, HyperCube's core business is to provide wholesale services, and the company does not participate in end-user traffic stimulation. However, because HyperCube does not have a longstanding base of customers directing traffic to its network, the company offers certain economic incentives to encourage wholesale customers to undertake the cost and effort of switching from a traditional provider to use the HyperCube network.<sup>12</sup> These incentives contribute to the robustness of the competitive market for advanced, efficient, and cost-effective tandem switching and transport services. Leveraging the advantages of state-of-the-art technology and a network designed from the start to serve the needs of wholesale customers, HyperCube can provide these incentives to its customers as benefits of the efficiencies inherent in its network architecture. By encouraging customers to use its network, HyperCube can maximize efficiencies of scale and scope.

Moreover, greater traffic volumes enhance the company's ability to continue to provide customized commercial agreements for direct connections with customers' and other providers' networks, further increasing efficiencies, reducing the volume of traffic terminated under interstate access charge tariffs, and facilitating the transition to a more rational intercarrier compensation system.

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<sup>12</sup> The Commission has properly declined to declare revenue sharing *per se* unlawful. See *NPRM* at ¶ 661.

The incentives employed by HyperCube and other competitive wholesale providers thus are marketing tools that encourage providers to explore the benefits of utilizing next generation competitive tandem switching and transport services as an alternative to traditional tandem networks. Increased competition in this marketplace promotes the deployment of forward-looking new services and innovative technology solutions that advance a nationwide broadband network and a transition to IP-based services, while ensuring call completion for consumers still served by traditional networks.<sup>13</sup> In addition, the proliferation of networks such as HyperCube's provides important diversity to other providers and achieves the objectives of increasing the ubiquity, seamlessness, and reliability of the nation's communications infrastructure.

HyperCube's approach of meeting the customer at its premises, providing the transport from the customer location to a HyperCube switch, and reducing the number of interconnections required to complete call flows, also promotes the development of competition in end-user mobile and IP-based services, freeing new providers to focus on their core competencies without the need to invest in network facilities and switching equipment that can provide a direct hand-off to traditional networks.

Competition generated by market participants such as HyperCube and others is driving down both originating and terminating switched access rates for all carriers, which ultimately benefits consumers. Carriers in the highly competitive tandem switching market not only must be extremely efficient, but also must be able to perform flawlessly in order to remain competitive. Efficient carriers are also able to employ certain strategies to attract more traffic to

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<sup>13</sup> See *NPRM* at ¶ 15 (identifying as one of the priorities of the ICC/USF reform program "sustaining high-quality, reliable voice service for all Americans"). The *NPRM* cites several filings describing the current need for carriers to convert IP traffic to TDM for termination on legacy networks. See *NPRM* at ¶¶ 527 n.783. By providing that protocol conversion, among other services, to multiple IP-based providers, HyperCube obviates their need to invest in legacy technologies and thus promotes the evolution of the telecommunications infrastructure to an IP-based broadband network.

their networks, providing the opportunity to reduce costs further, by employing revenue sharing approaches.

On several previous occasions, the Commission has rejected efforts to restrict wholesale revenue sharing arrangements in the telecommunications industry. For example, the Commission has found that "it is not unlawful per se" for an interexchange carrier to pay commissions to private payphone companies "to compensate them for their costs in making operator services available to the end user."<sup>14</sup> In addressing payments by wholesale carriers to hotels and other aggregators, the Commission recognized that "the primary effect of the commission payments [to institutions that are sources of 8YY traffic] appears to be to create a financial incentive for the institutions to switch from the incumbent to a competitive service provider."<sup>15</sup> Similarly, the incentive arrangements employed by HyperCube and others are intended to create an economic incentive for prospective customers to undertake the effort and costs of switching from a traditional carrier to HyperCube. In the competitive telecommunications market today, carriers will not interconnect their networks for purposes of traffic exchange absent some form of compensation arrangement. In meet-point billing arrangements that have been used for decades, a LEC often bills for and collects intercarrier compensation and shares the revenue with another carrier that contributes to the origination (or termination) of a call. Similarly, the incentives HyperCube offers wholesale customers involve sharing revenue with other providers in the call path.

The FCC has never prohibited such revenue-sharing arrangements, and it is not the Commission's intention to do so in this proceeding. Revenue sharing arrangements with

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<sup>14</sup> See *AT&T's Private Payphone Commission Plan*, Memorandum Opinion and Order, 7 FCC Rcd. 7135, ¶ 8 (1992).

<sup>15</sup> See *Access Reform*, Eighth Report & Order and Fifth Report and Order on Reconsideration, 19 FCC Rcd. 9108, ¶ 70 (2004) (footnotes omitted).

carriers, such as those employed by competitive tandem service providers, are invisible to the calling party, and thus do not stimulate the calling party to place additional calls. The Commission should take care to avoid inadvertently disrupting such revenue sharing arrangements that do not stimulate end-user traffic and that are beneficial to the participating network and its customers.<sup>16</sup> This is particularly the case when the services provided by independent tandem switching and transport providers such as HyperCube promote implementation of the broadband transition.<sup>17</sup> Classifying these wholesale incentives as “access revenue sharing” under the proposed over-broad definition threatens these competitive benefits.

Furthermore, by proposing a tariff rate cap as the remedy, the Commission’s proposed rules demonstrate that the FCC intends to target cap arrangements that have unusually high LEC interstate access rates. HyperCube’s interstate access rates, however, *already* are benchmarked to the respective tariffed rates of the RBOCs in the serving areas in which HyperCube operates.<sup>18</sup> Thus, HyperCube already has in place the very per call rates the Commission’s proposals would require of CLECs engaging in revenue sharing.<sup>19</sup>

In the case of a CLEC already meeting the rate benchmark, there can be no reason to

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<sup>16</sup> Revenue sharing is a fundamental and economically healthy part of the telecommunications industry and our capitalist system. Indeed, the FCC itself, in recommendation 5.4 of the *National Broadband Plan*, has proposed revenue sharing with respect to the proceeds of spectrum auctions, in order to provide an incentive for existing spectrum users to allow re-allocation of spectrum for more efficient uses.

<sup>17</sup> See *NPRM* at ¶¶ 608; n.911 (detailing factors that are disincentives to the transition).

<sup>18</sup> HyperCube’s 18 switches are deployed in major markets, not in rural areas, to provide maximum efficiency and nationwide coverage and connectivity. Indeed, HyperCube’s network design is the antithesis of routings intended to promote end-user traffic stimulation. HyperCube has, for example, a Point of Interconnection (“POI”) located in a rural area for customer convenience, but the POI is used for traffic egress only. HyperCube transports the traffic to a major market switch for interconnection purposes, and the calls are rated based on the major market switch location, not on the location of the rural POI.

<sup>19</sup> See *NPRM* at Appendix C, Proposed Rule 61.26(g).

require new tariff filings, to deny the tariffed rates “deemed lawful” status,<sup>20</sup> or to require additional cost support data.<sup>21</sup> Such burdensome requirements would serve no purpose, and would be contrary to the public interest, since they would adversely affect the competitive market for competitive tandem switching, transport, and termination services by imposing unnecessary costs on CLECs. The Commission should therefore revise its proposed rules<sup>22</sup> as proposed by HyperCube below.

**B. The Proposed CLEC Tariff Rules Should Not Apply when a CLEC Shares Revenue with a Carrier that Contributes to Call Origination Without Stimulating End-User Calls or when a CLEC has Interstate Access Rates at the Benchmark Rate.**

Any Commission rules intended to address end-user traffic stimulation should be precise in their terminology and limited in their impact. In particular, they should avoid needlessly imposing burdensome requirements on carriers not engaged in end-user traffic stimulation and/or whose rates already satisfy the Commission’s proposed benchmark.

HyperCube therefore recommends that the following clarifications and modifications be included in any final rules adopted in this proceeding:

**1. Proposed Rule 61.3(aaa) is Overbroad.**

The Commission’s proposed definitional rule 61.3(aaa), intended to identify revenue sharing arrangements that stimulate end-user calling, is as follows:

(aaa) *Access revenue sharing.* Access revenue sharing occurs when a rate-of-return ILEC or a CLEC enters into an access revenue sharing agreement

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<sup>20</sup> Under the Commission’s proposed rules, tariffs filed pursuant to proposed Rule 61.26(g) would be filed on 16 days’ notice. That would exclude them from being “deemed lawful” under Section 204(a)(3) and the Commission’s *Streamlined Tariff Order* absent rejection or suspension and investigation by the Commission. 47 U.S.C. § 204(3) (a); *see also Implementation of Section 401(b)(1)(A) of the Telecommunications Act of 1996, Report and Order*, 12 FCC Rcd. 2170 (1997) (“*Streamlined Tariff Order*”).

<sup>21</sup> *See NPRM* at ¶ 665.

<sup>22</sup> HyperCube’s proposed rule modifications are also provided in Appendix A.

that will result in a net payment to the other party (including affiliates) to the access revenue sharing agreement, over the course of the agreement. A rate-of-return ILEC or a CLEC meeting this trigger is subject to revised interstate switched access charge rules.

Unfortunately, the delimiter in this definition is that there is “a net payment to the other party,” not that there is stimulation of end-user calling. This definition may have the unintended consequence of disrupting healthy competition by failing to exclude from the definition of “other party” another carrier in the call path. The proposed rule also imprecisely describes the nature of the targeted revenue sharing arrangements that would trigger the filing requirement by broadly denominating the arrangements as “access revenue sharing.” The rule as drafted thus not only covers arrangements stimulating end-user calling to high access rate locales but also, overbroadly, covers pro-competitive revenue sharing by carriers with their wholesale carrier customers.

HyperCube therefore recommends that, if the Commission decides to adopt rules addressing end-user traffic stimulation, the proposed definitional rule § 61.3(aaa) be revised to read as follows to properly limit its scope:

**(aaa) *End-user traffic stimulation.* End-user traffic stimulation** occurs when a rate-of-return ILEC, a rural CLEC, or a CLEC located in the territory of a rate-of-return ILEC (i) imposes interstate exchange access service rates above the switched access rates of the RBOC in the state (or, if there is no RBOC in the state, of the incumbent LEC with the largest number of access lines in the state), and (ii) enters into an agreement that, over the course of the agreement, will result in a net payment to the other party (including an affiliate) to the agreement as a result of that party’s stimulation of end-user traffic. A rate-of-return ILEC or a CLEC meeting this trigger is subject to revised interstate switched access charge rules.

**2. Proposed Rule 61.26(g) Should Not Apply to CLECs Whose Rates Already Meet the Effective Per Call Bill Rate Benchmark.**

Under Proposed Rule 61.26(g), CLECs engaged in revenue sharing with their wholesale customers would needlessly be subject to the additional burdensome tariff restrictions of

Proposed Rule 61.26(g), despite the fact that the rule is intended to target end-user traffic stimulation arrangements. The proposed rule, if triggered, imposes not only a new cap on CLEC interstate access tariff rates, but also the burdensome new restriction making interstate access tariffs subject to a 16-days' notice filing requirement and thus ineligible for "deemed lawful" status with a conclusive presumption of reasonableness.<sup>23</sup>

The proposed rule is overbroad in apparently requiring new tariff filings and loss of "deemed lawful" status even when, as in the case of HyperCube, a CLEC's interstate access rates are *already* at or below the proposed benchmark. Since the apparent goal of the rule—benchmarked rate levels—would already be in place, the tariff filing would be moot. Requiring the filing to be made on 16 days' notice, however, would leave the door open for needless extended intercarrier disputes and Commission proceedings.<sup>24</sup>

If the change to the definitional Proposed Rule § 61.3(aaa) recommended above by HyperCube is not adopted, but the Commission adopts rules prohibiting "access revenue sharing," as defined in Proposed Rule § 61.3(aaa), Proposed Rule 61.26(g) and (g)(1) should, at

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<sup>23</sup> Even more onerous, the Commission is apparently considering imposition of Section 61.38 cost and revenue support documentation requirements on carriers meeting the trigger, requirements now inapplicable to any CLEC. *See NPRM* at ¶ 665. Such obligations are wholly unnecessary when the CLEC already has effective per call bill rates at or below the benchmark proposed by the new rule. The only effect of such new requirements would be to thwart marketplace competition by imposing needless expense on CLECs (and on the Commission) and put CLECs competing with IXCs for transport and switching services at a significant disadvantage. This is hardly beneficial (except to IXCs) at a time when the market is exploring new options for efficient traffic routing and preparing for a broadband world where traditional network architectures and even carrier classifications may be fundamentally different or even irrelevant. The Commission should not take lightly the impact of imposing new regulations that affect the competitive balance between market players and precipitate marketplace disruptions in a competitive environment.

<sup>24</sup> Such a result would, moreover, be inconsistent with the intent of the proposed rules to avoid such disputes. Indeed, even in the case of carriers needing to file new tariffs to achieve the benchmark rates, if the rates are at the level the Commission has already directed, why should the Commission set itself on a path leading to numerous proceedings challenging the reasonableness of those very Commission-directed rates? Tariff enforcement resources, if any, could better be directed at carriers not filing benchmark rate tariffs.

the very least, be modified as follows to avoid unnecessarily burdening competition:

**§ 61.26 Tariffing of competitive interstate switched exchange access services.**

\* \* \* \* \*

(g) Notwithstanding paragraphs (b)-(e) of this section, a CLEC engaged in access revenue sharing, as that term is defined in section 61.3(aaa) of this Part, shall not file a tariff for its interstate exchange access services that prices those services above the effective per call bill rate prescribed in the access tariff of the RBOC in the state, or, if there is no RBOC in the state, the incumbent LEC with the largest number of access lines in the state.

(1) A CLEC engaging in access revenue sharing, as that term is defined in section 61.3(aaa) of this Part, **and whose tariffed rates exceed the rate ceiling specified in subsection (g) above**, shall file revised interstate switched access tariffs within forty-five (45) days of commencing access revenue sharing as that term is defined in section 61.3(aaa) of this Part, or within forty-five (45) days of [the effective date of the Order] if the CLEC on that date is engaged in access revenue sharing, as that term is defined in section 61.3(aaa) of this Part.(2) A CLEC shall file the revised interstate access tariffs required by subparagraph (1) of this paragraph (**but not subsequent tariffs**) on at least sixteen (16) days' notice.

**III. The Commission Should Add the Jurisdiction Information Parameter (JIP) to the Call Signaling Rule to Substantially Reduce “Phantom Traffic.”**

Like many other carriers, HyperCube loses substantial revenue opportunities and is burdened with inappropriate bills from other carriers because of phantom traffic that cannot be accurately billed due to lack of appropriate call detail information. The Commission should act promptly and decisively to address phantom traffic issues in order to free the Commission and the industry to focus on broader ICC reforms that will lead to an ICC regime sustainable in a broadband environment.<sup>25</sup>

HyperCube recommends that the Commission enhance the effectiveness of its proposed rules by also requiring population of the Jurisdiction Information Parameter (“JIP”) code,<sup>26</sup>

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<sup>25</sup> See *NPRM* at ¶ 505.

<sup>26</sup> The JIP code supplies originating carrier-specific information in the form of the 6-digit Local Routing



where technically feasible, by originating carriers, effective 36 months after adoption of the Commission's Order. HyperCube also recommends that the Commission encourage intermediate carriers to use their best commercial efforts to populate the JIP code now, in accordance with industry recommendations, by freeing intermediate carriers from liability<sup>27</sup> in phantom traffic disputes if, and only if, they accurately pass on the information received from prior carriers in the call path, and/or supplement missing or incomplete data in accordance with industry recommendations.<sup>28</sup> The Commission should also put the industry on notice that it will monitor industry standardization efforts closely and may require population of further parameters as standards developments warrant, if phantom traffic disputes continue.

**A. The Commission's Proposed Call Signaling Rules Do Not Go Far Enough.**

As a competitive tandem switching services provider, HyperCube focuses on the interconnection of all types of networks. HyperCube's network provides the technology that allows seamless interworking among IP-based networks using Session Information Protocol ("SIP") message headers; circuit-switched TDM networks, including both those using Signaling System 7 ("SS7") out-of-band signaling and traditional networks using Multi-Frequency ("MF")

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Number ("LRN") of the originating carrier's end office.

<sup>27</sup> See *Verizon's Proposed Regulatory Action to Address Phantom Traffic* at 9, Verizon White Paper (May 23, 2005), attached to Letter from Donna Epps, Vice President Federal Regulatory, Verizon, to Marlene H. Dortch, Secretary, FCC, CC Dkt. 01-92 (Dec. 20, 2005) ("*Verizon White Paper*").

<sup>28</sup> See, e.g., ATIS "Rules for Populating JIP," Rule 5 ("Where the originating switch cannot signal JIP it is desirable that the subsequent switch in the call path populate the JIP using a data fill default associated with the incoming route. The value of the data fill item is an NPA-NXX associated with the originating switch or MSC and reflective of its location."). See Stuart Goldman, *The Seven Rules of JIP*, ATIS (2004), available at

[http://docs.google.com/viewer?a=v&q=cache:OJx0wq0CPaUJ:www.atis.org/pix/supercomm04media/GoldmanSuperComm%25202004Final.ppt+Stuart+Goldman,+The+Seven+Rules+of+JIP,+ATIS&hl=en&gl=us&pid=bl&srcid=ADGEESgq01MRM4a4YXbLdtowDBnV-1DxXJt2uta6W87guEmgpKYUfXgfWnsW\\_Q16Wf5ut-vdH6Unyt9MVXSzD\\_4TU0v7IwduzLcx6fSl\\_fSczuYGmPnJTHZnDFvGxYadF8QoKQeb5Bj&sig=AHIEtbSJvDf7Q-qKLt6T052eByfqWTKluA](http://docs.google.com/viewer?a=v&q=cache:OJx0wq0CPaUJ:www.atis.org/pix/supercomm04media/GoldmanSuperComm%25202004Final.ppt+Stuart+Goldman,+The+Seven+Rules+of+JIP,+ATIS&hl=en&gl=us&pid=bl&srcid=ADGEESgq01MRM4a4YXbLdtowDBnV-1DxXJt2uta6W87guEmgpKYUfXgfWnsW_Q16Wf5ut-vdH6Unyt9MVXSzD_4TU0v7IwduzLcx6fSl_fSczuYGmPnJTHZnDFvGxYadF8QoKQeb5Bj&sig=AHIEtbSJvDf7Q-qKLt6T052eByfqWTKluA) ("*ATIS Rules for Populating JIP*").

in-band signaling; and the systems of commercial mobile radio service providers. By necessity and design, HyperCube is a leader in implementing the latest developments in switching systems, for HyperCube's mission is to facilitate call completion by these diverse networks.

In the *NPRM*, the Commission pointed out that although access charges and reciprocal compensation are the primary types of ICC, the rates applicable to a particular instance of an exchange of traffic vary according to the jurisdictional nature of the traffic, the providers involved and the regulations affecting their rates, and the types of traffic involved.<sup>29</sup> If there is uncertainty as to any of these factors, there is potential for phantom traffic disputes. If the originating carrier data is missing or inaccurate, billing is impossible, regardless of the applicable rate. The Commission's proposal is consistent with prior precedent relating to the call signaling rules and the Commission's jurisdiction over jurisdictionally-mixed interstate and intrastate traffic streams.<sup>30</sup> Moreover, as state entities contemplate their own call signaling rules,

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<sup>29</sup> See *NPRM* at ¶ 502 (factors affecting ICC rates include "(1) where the call begins and ends (interstate, intrastate, or 'local'); (2) what types of carriers are involved (incumbent LECs, competitive LECs, interexchange carriers (IXCs), wireless); and (3) the type of traffic (wireline voice, wireless voice, ISP-bound, data)").

<sup>30</sup> The FCC noted in the *Caller ID Order* that CPN-based services are jurisdictionally-mixed services. See *Rules and Policies Regarding Calling Number Identification Service – Caller ID*, Memorandum Opinion and Order on Reconsideration, Second Report and Order and Third Further Notice of Proposed Rulemaking, 10 FCC Rcd. 11700, ¶ 62 (1995) ("*Caller ID Order*"). Thus, it was "not feasible to have different default policies for interstate and intrastate calls." *Id.* at ¶ 85. In the context of a challenge by the California Public Utilities Commission to the federal preemption of conflicting state regulations with respect to the call-blocking signaling rules, the Court of Appeals for the Ninth Circuit upheld the Commission's authority to pre-empt state telecommunications traffic regulations when the traffic stream at issue is jurisdictionally mixed and the FCC found that maintaining conflicting state regulations would impede attainment of the federal objective by creating separate federal and state call signaling policies that would be unfeasible to maintain. See *California v. FCC*, 75 F.3d 1350 (9th Cir. 1995), *cert. denied*, 517 U.S. 1216 (1996) (upholding the federal preemption in the *Caller ID Order*). The Supreme Court has made clear that "where necessary to preserve Commission goals against conflicting state rules that thwart valid federal communications policies, the FCC may preempt state regulation if it is 'not possible to separate the interstate and intrastate components of the asserted FCC regulation.'" *Id.* (citing *La. Public Serv. Com v. FCC*, 476 U.S. 355, 375 (1986)). The FCC must "limit its regulation to the interstate aspects if it can do so." See *PUC of Texas v. FCC*, 886 F.2d 1325, 1333 (D.C. Cir. 1989). However, if the FCC believes a separation is not practical, and there is no evidence to show otherwise, a court will uphold the FCC's decision. See *PSC of Maryland v. FCC*, 909 F.2d 1510, 1516-17 (D.C. Cir. 1990). The

Commission action here would help drive uniformity and avoid confusion and disputes as to the applicable regulatory requirements.<sup>31</sup> HyperCube therefore supports the Commission's proposal to amend the call signaling rules applicable to all traffic originated or terminated on the Public Switched Telephone Network ("PSTN"), as a means of minimizing the phantom traffic problem while the FCC seeks more broadly to rationalize the ICC regime.<sup>32</sup>

The Commission partially addresses the problem by proposing to require provision of both the calling party's charge number ("CN") and calling party number ("CPN") data by all originating providers and to prohibit "stripping or altering call signaling information" at any stage of call transmission.<sup>33</sup> The Commission's proposal also appropriately permits continued

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modified call signaling rules proposed by the Commission in this docket are also consistent with prior Commission rulings that a forwarding carrier must provide the "the necessary information to permit the terminating carrier to issue a bill." *See Telephone Number Portability, Fourth Memorandum Opinion and Order on Reconsideration*, 14 FCC Rcd. 16459, ¶ 80 (1999) (citing *Telephone Number Portability, First Report and Order and Further Notice of Proposed Rulemaking*, 11 FCC Rcd. 8352, ¶ 140 (1996)). The same principle was applied when the FCC directed Verizon Virginia to pass call detail information it received from originating carriers to Cavalier Telephone in an action to resolve an interconnection dispute. *Cavalier Telephone LLC Pursuant to Section 252(e)(5) of the Communications Act for Preemption of the Jurisdiction of the Virginia State Corporation Commission Regarding Interconnection Disputes with Verizon Virginia, Inc. and for Arbitration, Memorandum Opinion and Order*, 18 FCC Rcd. 25887, ¶ 38 (2003) ("Cavalier Order").

<sup>31</sup> States are also considering call signaling rules of their own. *See, e.g.*, H.B. No. 2841 (2010), "AN ACT relating to the authority of the Public Utility Commission of Texas to protect telecommunications network integrity from unauthorized or uncompensated use." The proposed Texas legislation, H.B. No. 284, would, if adopted, amend Section 55.018 of the Utilities Code by adding a new subsection (d) as follows: "(d) The commission shall require each provider of telecommunications traffic on a publicly switched network to transmit in the provider's signaling without alteration, where technically feasible, all information necessary to ensure that the traffic is properly authorized and not fraudulent." (82R10014 JJT-D, introduced by Gallego, *available at*

[ftp://ftp.legis.state.tx.us/bills/82R/billtext/html/house\\_bills/HB02800\\_HB02899/HB02841I.htm](ftp://ftp.legis.state.tx.us/bills/82R/billtext/html/house_bills/HB02800_HB02899/HB02841I.htm)). In this case, the proposed state law would be inconsistent with current industry recommendations that direct intermediate carriers to make certain additions or alterations to signaling information to improve its accuracy and utility, and the law could be inconsistent with federal rules adopted in this proceeding, hampering implementation of uniform signaling rules.

<sup>32</sup> *NPRM* at ¶ 37. *See also National Broadband Plan* at 148 (recommending that the Commission act to prohibit elimination of billing information).

<sup>33</sup> *Id.* at ¶ 626.

use of factoring and carrier agreements on traffic classification, consistent with industry standards and Commission rules, to resolve phantom traffic issues.<sup>34</sup> However, it does not go far enough. With calls whose originating information is an 800 number, or emerging services such as Skype-Out which populate hundreds of calls with the same CPN and CN information, more information is needed to bill the original PSTN carrier appropriately.

**B. The JIP Code<sup>35</sup> is Now Widely Used in SS7 Signaling and is Available in SIP Messages, and Providers Should Be Required to Pass it to Subsequent Carriers in the Call Path.**

With the increasing role of mobile and IP-based communications systems in America,<sup>36</sup> consumer welfare, the economy, public health,<sup>37</sup> and law enforcement demand that wireline and wireless services provide the full records their technology permits to other carriers. The Commission's proposals, however, do not fully reflect the developments in call signaling and billing message data sharing standardization that have accompanied the dramatic changes in the communications marketplace. Standardization has also been impelled by the need for more effective ways of addressing responsibilities for implementation of such regulatory obligations as Local Number Portability, E911, and compliance with the Communications Assistance to Law Enforcement Act ("CALEA").

Any final rules adopted to address "phantom traffic" should not be limited to

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<sup>34</sup> See *NPRM* at ¶ 632.

<sup>35</sup> "JIP is a six-digit parameter in the SS7 ISUP Initial Address Message (IAM) used to convey information about call origin, as defined in the industry standard ATIS-PP-1000113.2005, Signaling System No. 7 (SS7) - Integrated Services Digital Network (ISDN) User Part (Revision of T1.113-2000)." See Letter from Thomas Goode, Associate General Counsel, Alliance for Telecommunications Industry Solutions ("ATIS") Network Interconnection Interoperability Forum, to Marlene H. Dortch, Secretary, FCC, CC Dkt. 01-92 (Feb. 10, 2006) ("*ATIS Ex Parte*").

<sup>36</sup> See *NPRM* at ¶ 8 (noting 27% of adult Americans live in wireless-only households).

<sup>37</sup> Use of JIP also has public safety benefits and, for example, can be used for improved routing of emergency calls to the appropriate poison control center.

transmission of CN and CPN data.<sup>38</sup> The Commission's current rule, which requires transmission of the non-mandatory "CN" data, implicitly acknowledges that industry standards and capabilities for parameter transmission go beyond the "mandatory" parameters required to be included in Signaling System 7 ("SS7") Initial Address Messages ("IAMs").

The JIP code is now an element of both SS7 signaling IAMs and Session Initiation Protocol ("SIP") "INVITE" messages. While the rules as proposed by the Commission "would assist in determining the appropriate service provider to bill for any call" (emphasis added), by adding JIP information to the parameters required by the FCC, identification of the provider to be billed is virtually certain, because the JIP is provider-specific, and it also includes at least some originating jurisdiction information.<sup>39</sup> This additional information may be particularly useful as the transition to all-IP networks proceeds<sup>40</sup> and less traffic falls within the traditional circuit-switched mode.

Because providers using SS7-<sup>41</sup> and SIP-based systems<sup>42</sup> can all provide the JIP code

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<sup>38</sup> The CN parameter is not mandatory. See, e.g., Letter from L. Charles Keller, Wilkinson Barker Knauer, LLP, to Marlene H. Dortch, Secretary, FCC, CC Dkt. 01-92 at 2 (Sept. 13, 2005) ("*Verizon Wireless Ex Parte*"). Verizon Wireless populates the JIP code. See *id.* at 2.

<sup>39</sup> While the JIP is not sufficiently specific to provide complete geographical information for resolving all types of jurisdictional issues, it does provide information sufficient to identify the nature of the originating provider, reducing the number of issues in dispute. Moreover, the JIP is populated as soon as the call touches the PSTN, enabling any intermediate or terminating carrier to identify the provider by reverse engineering or Local Routing Number ("LRN") dip. The JIP for wireless carriers is tied to a Mobile Switching Center ("MSC") that may cover multiple LATAs, MTAs, or local calling areas, so it would not necessarily be dispositive of the applicable charging regime, but it would indicate that the traffic originated on a mobile phone using a carrier-specific MSC. MSCs are, moreover, partitioned by market, so the JIP code does provide additional geographic information.

<sup>40</sup> See *NPRM* at ¶ 625 (seeking recommendations for additional means of ensuring "proper functioning of the intercarrier compensation system during a transition to all-IP networks.").

<sup>41</sup> See *ATIS Ex Parte*.

<sup>42</sup> See RFC 5503, "Private Session Initiation Protocol (SIP) Proxy-to-Proxy Extensions," March 2009 ("This document describes private extensions to the Session Initiation Protocol, RFC 3261, for supporting the exchange of customer information and billing information between trusted entities in the Packet Cable Distributed Call Signaling Architecture.") (Abstract at 2) ("*RFC 5503*"). This industry document

data (which is the applicable LRN of the originating carrier's end-office, indicating the geographic location of the originating caller or switch, and, by look-up, the original PSTN carrier),<sup>43</sup> JIP coding can be readily implemented across all platforms as telecommunications in the U.S. evolves.<sup>44</sup> Exchange of this additional data field in IAMs or SIP "INVITE" messages will ensure that industry standard billing records for "calls received by terminating providers include sufficient signaling information for that provider to identify and bill the appropriate provider."<sup>45</sup> While originally developed for call routing, no technical reason precludes use of the JIP parameter also to provide data for billing purposes,<sup>46</sup> particularly when combined with other

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provides for population of the JIP in billing records by a Trusted User Agent Client ("UAC") after it performs a Local Number Portability ("LNP") query. (§ 7.3.) This paper and the policies it describes are specifically intended to address situations when "It is therefore necessary to carry billing information separate from the calling and called party identification. Furthermore, some billing models call for split charging where multiple entities are billed for portions of the call. The addition of a SIP General Header Field allows for the capture of billing information and billing identification for the duration of the call." (§ 2, Introduction, at 5-6.) These policies are also to be applied for such purposes as Public Safety Answering Point routing of calls, CALEA compliance, tracing of harassing calls, etc. (§ 2 at 6).

<sup>43</sup> The SS7 JIP code is a six-digit field in the SS7 ISUP IAM message. It has an NPA-NXX format and indicates the geographic location of the originating caller or switch.

<sup>44</sup> The MF in-band signaling protocol is used in legacy networks, which use the ANI II Digits to carry information about the calling party and class of service of a call. *See* "ANI II Digits Assignments," ANI II Digits Assignments, NANPA.com,

[http://www.nanpa.com/number\\_resource\\_info/ani\\_ii\\_assignments.html](http://www.nanpa.com/number_resource_info/ani_ii_assignments.html) (last visited Apr. 1, 2011) ("ANI II digits are two-digit pairs sent with the originating telephone number as part of the signaling that takes place during the setup phase of a call. These digits identify the type of originating station."). *See also* ANI Numbering Resources ANI II Digits, NANPA.com,

[http://www.nanpa.com/number\\_resource\\_info/ani\\_ii\\_digits.html](http://www.nanpa.com/number_resource_info/ani_ii_digits.html) (last visited Apr. 1, 2011). Intermediate carriers can provide JIP code information (which is the LRN) to carriers using MF in accordance with JIP Rule 5 in industry standard billing records and can populate the JIP with information from MF networks. *See* NENA 03-002 (for ANI-II and LRN).

<sup>45</sup> *NPRM* at ¶ 37.

<sup>46</sup> To the extent that some have complained that SS7 was intended for call routing, not billing, the simple answer is that the data needed to reduce phantom traffic issues is available, and it can and should be used for billing as well. The "technological feasibility" exception in the proposed rules adequately covers situations where a provider's system lacks necessary capabilities. Moreover, use of JIP also can have substantial public safety benefits. In response to a request from a large wireless customer for a solution that would route calls originated on wireless phones to the proper poison control center, HyperCube pioneered the use of JIP to provide the necessary routing information, since the JIP is MSC-specific, and

indicators (CN, Originating Line Identifier (“OLI”), and Nature of Address (“NOA”)) already present in the network. Current industry recommendations, moreover, direct intermediate carriers to populate the JIP field if it is not already included in transmissions from initiating carriers.<sup>47</sup> Because the JIP code is not mandatory by industry standards, however, a Commission rule requiring its transmission where technically feasible would not lead to additional call blocking.<sup>48</sup> Moreover, as proposed by HyperCube, the rule requiring JIP would not take effect for 36 months, minimizing any potential disruptions.

The use of JIP codes is hardly a new development. Switches eleven or more years old were JIP-capable out of the box. Verizon Wireless, for example, reported populating the field in a 2005 Commission submission.<sup>49</sup> Tariff filings by many wireline carriers prescribe use of JIP for such purposes as ICC billing and number portability.<sup>50</sup> The SIP industry standard has been

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provides the location where a call first accesses the PSTN.

<sup>47</sup> This may be done through customer-provided information, LRN data dips, reverse engineering of trunk groups, or, to the extent call-specific data is unavailable, by use of factoring. *See* the ATIS “Rules for Populating JIP, Rule 5” (“Where the originating switch cannot signal JIP it is desirable that the subsequent switch in the call path populate the JIP using a data fill default associated with the incoming route. The value of the data fill item is an NPA-NXX associated with the originating switch or MSC and reflects its location.”). The ATIS standard was initially issued in 2001 and has been revised several times. *ATIS Rules for Populating JIP*.

<sup>48</sup> *See NPRM* at ¶¶ 628; n.968 (expressing concerns about potential additional call blocking resulting from rule changes).

<sup>49</sup> *See Verizon Wireless Ex Parte*.

<sup>50</sup> *See, e.g.,* Re: Jurisdiction Development Utilizing Jurisdictional Identification Parameter (JIP), VerizonWireless.com,

[http://www22.verizon.com/wholesale/library/local/industryletters/1,east-wholesale-resources-2006\\_industry\\_letters-ixc-01\\_12,00.html](http://www22.verizon.com/wholesale/library/local/industryletters/1,east-wholesale-resources-2006_industry_letters-ixc-01_12,00.html) (last visited Apr. 1, 2011) (“January 12, 2006, Subject: Jurisdiction Development Utilizing Jurisdictional Identification Parameter (JIP): This notice is to inform you that Verizon will implement the usage processing system enhancements required to adhere to the resolution of OBF Issues #2308 and #2349. Specifically, when Verizon terminates a call to one of its local dial tone customers from a wireless end user, Verizon will utilize the information contained within the Jurisdictional Identification Parameter (JIP) to identify the jurisdiction of the traffic based upon the originating local routing number. This enhancement will increase the accuracy of Switched Access usage billing by minimizing the occurrence of incorrect jurisdiction development caused by reliance on Calling Party Number or Charge Number in roaming cellular scenarios. Verizon is scheduled to implement the

published and is widely available.<sup>51</sup>

In addition to use of JIP being “strongly recommended” by ATIS<sup>52</sup> and already widespread, even carriers whose existing technology is not JIP-capable have commercial options for populating the JIP without replacing or upgrading current equipment and software. Competitive tandem providers such as HyperCube (and others) also can populate the JIP, in accordance with existing ATIS recommendations, which refer to such data refinement service as “desirable.”<sup>53</sup>

Requiring the use of the JIP code where technically feasible<sup>54</sup> thus reflects the current state of the industry, which has moved forward significantly since the Alliance for Telecommunications Industry Solutions’ (ATIS) Network Interconnection Interoperability Forum (NIIF) *Ex Parte* of February 10, 2006.<sup>55</sup> Not only have wireless issues been largely

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system enhancements in February 2006. If you have any questions, please contact your Verizon Account Manager.”) (*Jurisdiction Development Utilizing Jurisdictional Identification Parameter*”); *see also* AT&T 22-State Guide on Number Portability Procedures (part of the AT&T GRMS ICA), CLEC.ATT.com,

<https://clec.att.com/clec/shell.cfm?section=115#Optional%20Stand%20Alone%20Agreements>, Attachment 04 - Local Number Portability and Numbering at ¶ 4.1.5 (revised Jan. 03, 2011) (last visited Apr. 1, 2011) (“Where technically feasible, the Parties shall populate the Jurisdiction Information Parameter (JIP) field with the first six (6) digits (NPA NXX format) of the appropriate LRN of the originating switch.”).

<sup>51</sup> *See Verizon Wireless Ex Parte*.

<sup>52</sup> *See ATIS Ex Parte*.

<sup>53</sup> *See ATIS Rules for Populating JIP*.

<sup>54</sup> State regulators are already requiring use of the JIP parameter in some situations. *See, e.g.*, Letter from Mary McManus, Comcast Corp., to Marlene H. Dortch, Secretary, FCC, WC Dkt. 08-56 (Feb. 3, 2009) (attaching an order from the Vermont Public Service Board affirming a Proposal for Decision concluding Comcast is a telecommunications carrier and including in ¶ 49 proposed language requiring Comcast to provide call detail records for traffic terminated over VTEL’s network, including JIP).

<sup>55</sup> *See ATIS Ex Parte*. This document provided a presentation on the use of the JIP parameter, including the “ATIS Rules for Populating JIP.” Since that presentation, however, significant industry developments include consensus on the use of JIP in SIP messages.



resolved,<sup>56</sup> but also the SIP standard has been completed.<sup>57</sup> Intermediate carriers such as HyperCube regularly populate the code if they receive signaling and billing information that omits it.<sup>58</sup> Significantly, new, smaller service providers are more likely than traditional carriers to have equipment that will pass the JIP parameter, since it is a feature of virtually all SIP equipment, so there should not be an adverse impact on small businesses. The “technical feasibility” exception to the rules also ensures that implementation would not be unduly burdensome.

HyperCube therefore recommends that, in addition to requiring immediate population of the CN and CNP parameters, effective 36 months after the issuance of the Order, the Commission require population of the JIP in call signaling<sup>59</sup> whenever technically feasible.<sup>60</sup>

**C. Intermediate Carriers Play a Positive Role in Refining Call Billing Information and Should be Exempt from Liability for Industry-Standard Population of Data Fields.**

While the *NPRM*’s description of the call signaling and billing messaging process is generally accurate,<sup>61</sup> the discussion of the role of tandem transit service providers is not. In contrast to claims of purported difficulty in correctly billing traffic when tandem transit services are involved, *NPRM* at ¶ 622 and n.953, competitive tandem switching service providers such as

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<sup>56</sup> See *Jurisdiction Development Utilizing Jurisdictional Identification Parameter*.

<sup>57</sup> See *RFC 5503*.

<sup>58</sup> See Section C. Also, “[i]n Verizon Wireless experience, regional tandem providers’ traffic reports accurately and reliably identify originating carriers’ usage in most instances.” *Verizon Wireless Ex Parte* at 3.

<sup>59</sup> These include “signaling used to set up calls, industry standard billing records sent by tandem switch operators to terminating service providers, and session initiation protocol (SIP) messages for VoIP calls.” See *NPRM* at ¶ 62.

<sup>60</sup> See Appendix A for HyperCube’s revision of Proposed Rule § 64.1601.

<sup>61</sup> See *NPRM* at ¶¶ 621 – 23.

HyperCube help minimize the problem.<sup>62</sup>

Through customer agreements and tariff terms requiring provision of information to HyperCube, as well as by tracking originating call routing, HyperCube is able to pass on more complete billing information than a terminating carrier may receive directly from an originating provider. Industry standards specifically encourage such population of missing data by intermediate carriers. As the entity responsible for ensuring that data can be passed along from carrier to carrier regardless of the differences between and limitations of their respective network technologies, HyperCube can and does ensure that billing information, as well as the call, gets through. HyperCube agreements require customers to follow industry standards and expressly prohibit ANI masking and other measures that may obscure information needed to determine call routing and jurisdiction. To the extent that complete geographical information is unavailable, as may be the case for some SIP calls, HyperCube, consistent with industry recommendations, relies on factoring,<sup>63</sup> based on Percentage of Interstate Use (“PIU”) reports from customers. However, with implementation of the recommended rule changes, this will be minimized.<sup>64</sup> Where standards are not yet established, HyperCube nonetheless expects its customers to use

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<sup>62</sup> See *Verizon Wireless Ex Parte* at 3.

<sup>63</sup> See *Verizon White Paper* at 10-13.

<sup>64</sup> To the extent that there are concerns that the JIP does not resolve all jurisdictional issues (because it is not specific to a given local calling area, for example), the number of calls accessing an MSC outside the local calling area of the caller location would reasonably be expected to be equivalent to the number accessing an out-of-local calling area MSC in the reverse direction, and such assumptions can be included in commercial agreements, similar to existing factoring agreements. With the JIP identifying the originating provider, billing disputes should be minimal. Moreover, when industry standardization is complete, requiring accurate population of additional data fields, such as the Originating Line Identifier (“OLI”), would virtually eliminate such disputes. HyperCube expects customers to populate not only the JIP but also, in SS7 systems, the OLI. It has been used for many years by wireless providers such as Verizon Wireless. See *Verizon Wireless Ex Parte* at 2. For customers using SIP, HyperCube calls for customer population of the DCS-Billing-info fields. These parameters are to be populated, like the JIP, on a per-call basis. The SIP industry is now considering adding a parameter similar to OLI to its standard.

commercially reasonable methods to provide accurate call information.

As described above, ATIS strongly recommends population of the JIP, and the recommendations state that it is desirable for intermediate carriers to populate the JIP whenever possible. Intermediate carriers therefore can play a significant role in solving the phantom traffic problem, particularly if originating carriers are required to provide them with the JIP code data to pass on to carriers later in the call path. Intermediate carriers however, can only pass on the best information they have, whether provided by customers or their own technical equipment.

The Commission should therefore immediately encourage intermediate carriers to take the type of steps already employed by HyperCube and others to increase the completeness and accuracy of information passed on to terminating carriers. Intermediate carriers should not be concerned that such “Good Samaritan” efforts will subject them to liability or enmesh them in disputes between originating and terminating providers.

The revised rules should provide that, so long as an intermediate carrier passes along billing message data fields unchanged from what is provided to it, or populates data fields in accordance with industry recommendations and Commission rules, the intermediate carrier would not have any liability or involvement in ICC disputes between originating and terminating providers.<sup>65</sup> This rule would apply not only to any data fields required under industry standards or FCC rules at the time, but also to the JIP field whose population is strongly recommended in the industry.<sup>66</sup>

**D. The Commission Should Anticipate Requiring Population of Additional Codes as Industry Standards Evolve.**

HyperCube also endorses the Commission’s view that its rules should be “flexible

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<sup>65</sup> See *Verizon White Paper* at 9.

<sup>66</sup> See Appendix A for HyperCube’s proposed revised § 64.1601.

enough to adapt to a variety of technical standards and accommodate their evolution.”<sup>67</sup> To that end, while moving forward on the rate disparities that may provide motivation for phantom traffic disputes,<sup>68</sup> the Commission should also monitor closely the development of additional industry information exchange standards and recommendations. The Commission can then be prepared to further modify the FCC call signaling rules quickly when warranted by increasing industry consensus and by identification of the remaining types of phantom traffic disputes that divert resources from investment and innovation.<sup>69</sup>

For example, while there is not yet industry consensus urging use of the Originating Line Identifier (“OLI”) parameter,<sup>70</sup> which specifies the originating instrument of a call,<sup>71</sup> population of this parameter would virtually eliminate type-of-call jurisdictional issues. The OLI indicator, which uses the same decimal codes as the ANI- II digits used in MF systems, is also present even in MF signaling networks as the ANI-II indicator.<sup>72</sup> While no standards have yet been

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<sup>67</sup> See *NPRM* at ¶ 37.

<sup>68</sup> See, e.g., *NPRM* at Figure 3; n.26 (describing the Commission’s glide path for addressing ICC and the variety of rates applicable to ICC).

<sup>69</sup> See, e.g., *NPRM* at ¶ 37.

<sup>70</sup> See, e.g., Dispatch Working Group Internet-Draft, Tools.IETF.org, <http://tools.ietf.org/html/draft-patel-dispatch-cpc-oli-parameter-03> (last visited Apr. 1, 2011) (draft expired 12/2010) (discussing use of the OLI parameter). See also ANSI ISUP Originating Line Info Support, Dialogic.com, [http://www.dialogic.com/webhelp/IMG1010/10.5.3/WebHelp/Description/Interworking/SIP\\_ISUP\\_OLI.htm](http://www.dialogic.com/webhelp/IMG1010/10.5.3/WebHelp/Description/Interworking/SIP_ISUP_OLI.htm) (last visited Apr. 1, 2011) (describing how to pass OLI information from SIP into SS7 by using an INVITE).

<sup>71</sup> See Network Working Group Internet-Draft, Tools. IETF.org, <http://tools.ietf.org/html/draft-haluska-dispatch-isup-oli-01> (last visited Apr. 1, 2011) (a working document with a June 13, 2010, expiration date that provides syntax for potentially providing OLI information through use of the SIP URI parameter "isup-oli" for interworking the ISUP Originating Line Information parameter or equivalent PSTN signaling information with SIP and noting that MF systems provide the information through ANI-II digits).

<sup>72</sup> See ANI II Digits Assignments, NANPA.com, [http://www.nanpa.com/number\\_resource\\_info/ani\\_ii\\_assignments.html](http://www.nanpa.com/number_resource_info/ani_ii_assignments.html) (last visited Apr. 1, 2011).

established, some carriers have started to use the OLI 40 and 93 codes to indicate IP calls,<sup>73</sup> and OLI data can also indicate mobile and mobile roaming-type calls. Use of OLI eliminates possible loss of information determinative of the origin of a call carried over from a SIP to a TDM network. This parameter is therefore particularly helpful when intermediate tandem operators want to ensure call information moves correctly from true IP to traditional networks.<sup>74</sup>

#### **IV. Conclusion**

HyperCube endorses the Commission's efforts to reform the complex intercarrier compensation system. If the Commission adopts rules to address end-user access stimulation concerns, however, it should ensure that the rules are narrowly drawn and do not apply also to pro-competitive wholesale revenue sharing activities of competitive carriers, or to carriers whose rates are already at proposed benchmark levels when calculated on the basis of the effective per call bill rate. The Commission's proposed rules to address "phantom traffic" issues are helpful, but they should be modified to specify also that at least one additional parameter, the JIP, should be transmitted where technically feasible, within 36 months of the Order. The Commission should also encourage industry-standard population of data fields by intermediate carriers by exempting them from liability in ICC disputes so long as providers follow industry practices in transmitting received and improved data records. Finally, the Commission should monitor

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<sup>73</sup> Due to the lack of standardizations here, these are inconsistent and being negotiated via commercial agreements. Intermediate carriers often have such agreements in place, and are thus able to provide subsequent carriers in the call path with the information that eliminates type-of-call phantom traffic disputes.

<sup>74</sup> The Commission has said that it wants its rules to be forward-looking and to be applicable beyond the circuit-switched environment. *See NPRM* at ¶ 624.

*Comments of HyperCube Telecom, LLC*

*WC Docket No. 10-90, et al.*

industry standardization activities and be prepared to mandate transmission of additional parameters, such as the OLI, to further reduce phantom traffic disputes.

Respectfully submitted,



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## APPENDIX A (Proposed Modified Rules)

### HyperCube's Proposed Revision of § 61.3(aaa):

(aaa) ***End-user traffic stimulation.*** End-user traffic stimulation occurs when a rate-of-return ILEC, a rural CLEC, or a CLEC located in the territory of a rate-of-return ILEC (i) imposes interstate exchange access service rates above the switched access rates of the RBOC in the state (or, if there is no RBOC in the state, of the incumbent LEC with the largest number of access lines in the state), and (ii) enters into an agreement that, over the course of the agreement, will result in a net payment to the other party (including an affiliate) to the agreement as a result of that party's stimulation of end-user traffic. A rate-of-return ILEC or a CLEC meeting this trigger is subject to revised interstate switched access charge rules.

### HyperCube's Proposed Revision of § 61.26 (g) and § (g)(1) (to be used if the proposed revision of § 61.3(aaa) above is not adopted but § 61.26(g) and § (g)(1) are added):

#### **§ 61.26 Tariffing of competitive interstate switched exchange access services.**

\* \* \* \* \*

(g) Notwithstanding paragraphs (b)-(e) of this section, a CLEC engaged in access revenue sharing, as that term is defined in section 61.3(aaa) of this Part, shall not file a tariff for its interstate exchange access services that prices those services above the rate prescribed in the access tariff of the RBOC in the state, or, if there is no RBOC in the state, the incumbent LEC with the largest number of access lines in the state.

(1) A CLEC engaging in access revenue sharing, as that term is defined in section 61.3(aaa) (not sure it is defined) of this Part, **and whose tariffed rates exceed the rate ceiling specified in subsection (g) above**, shall file revised interstate switched access tariffs within forty-five (45) days of commencing access revenue sharing as that term is defined in section 61.3(aaa) of this Part, or within forty-five (45) days of [the effective date of the Order] if the CLEC on that date is engaged in access revenue sharing, as that term is defined in section 61.3(aaa) of this Part.

(2) A CLEC shall file the revised interstate access tariffs required by subparagraph (1) of this paragraph **(but not subsequent tariffs)** on at least sixteen (16) days' notice.

**HyperCube's Proposed Revision of § 64.1601:**

**§ 64.1601 Delivery requirements and privacy restrictions.**

(a) *Delivery.* Except as provided in paragraphs (d) and (e) of this section:

\* \* \* \* \*

(3) Entities subject to this provision are also required to transmit the information contained in the Jurisdiction Information Parameter (JIP) associated with every interstate or intrastate call to the next provider in the path from the originating provider to the terminating provider, where such transmission is feasible with network technology deployed at the time a call is originated. Entities subject to this provision that use Signaling System 7 (SS7) are required to transmit the JIP in the SS7 IAM Messaging to interconnecting providers. Entities subject to this provision that are not capable of using SS7 but that use multifrequency (MF) signaling should make arrangements with their SS7 gateways or upstream providers to supplement their calling data in accordance with Rule 5 of the ATIS "Rules for Populating JIP" to transmit the most appropriate JIP. Entities subject to this provision that use Session Initiation Protocol (SIP) are required to transmit the JIP in the INVITE message. The requirement to transmit the JIP parameter shall take effect [36 months after the effective date of the Order].

(4) An intermediate provider in an interstate or intrastate call path will neither be responsible for, nor bear any liability with respect to, the accuracy of the information passed to subsequent carriers in the call path whenever (a) the intermediate provider passes to subsequent carriers in the call path, unaltered, all signaling information the intermediate provider receives, including those identifying the telephone number of the calling party, charge and jurisdictional information; or (b) the intermediate provider supplements or modifies the signaling in accordance with published industry recommendations in order to provide the proper originating CN and/or JIP information to subsequent carriers in the call path.

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